2064
2074

MUSTANG SKID STEER LOADER

SERVICE MANUAL

PART # 000-88025

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SPECIFICATIONS
MODEL 2074

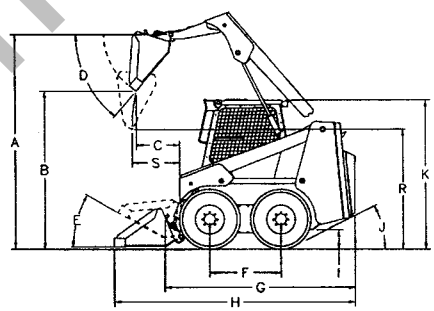
SOUND LEVELS:

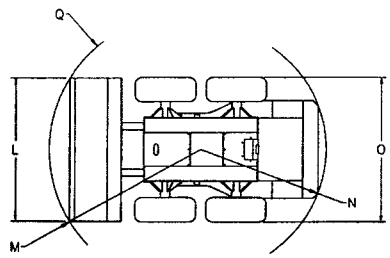
LpA Sound Pressure (Operator) Level with CE Kit # 830643 Installed = 82 dB(A)
Per ISO 6394
LwA Guaranteed Sound Power (Bystander) Level with CE Kit # 830643 Installed = 104 dB(A)
Per EU 2000/14/EC
Operator Sound Pressure Level with Operator Sound Kit # 830647
and Window Kit = 83 dB(A)

DIMENSIONAL DRAWINGS

DIMENSIONS

A - Lift Height @ Pin	119" (3023 mm)
B – Dump Height	92.7" (2349 mm)
C - Reach @ Full Height	27.0" (686 mm)
D - Dump Angle	38°
E - Rollback Angle	28°
F - Wheel Base	44.3" (1125 mm)
G - Length less Bucket	102" (2591 mm)
H - Length with Bucket	136" (3454 mm)
I - Ground Clearance	7.75" (197 mm)
J - Angle of Departure	27°
K - Overall Height	82.5" (2089 mm)
L - Width with Bucket	75.0" (1905 mm)
M - Front Clearance Circle	82.5" (2096 mm)
N - Rear Clearance Circle	64.5" (1638 mm)
Q - Turning Circle Radius (Bucket Down)	82.5" (2096 mm)
R - Specified Height:	65.5" (1657 mm)
S - Reach @ Specified Height	36.5" (927 mm)





O - Tires (Set in)

HD Flotation Tires	66.5" (1689 mm)
Solid Rubber Tires	60.7" (1542 mm)
Highway Tread Tires	65.7" (1689 mm)

Number of Wheel Studs: 8

O – Tires (Set out)

		Tire Size	Rim Offset
HD Flotation Tires	70.8" (1702 mm)	12 - 16.5 10 pr	1.25"
Solid Rubber Tires	67.0" (1702 mm)	750 x 16	1.76"
Highway Tread Tires	70.0" (1778 mm)	12 – 16.5 LT LR	1.25"
Super Flotation	74.5" (1892 mm)	33 x 15.5 – 16.5	1.62"

Width with Tracks 74.9" (1902 mm)

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SPECIFICATIONS
MODEL 2064

ENGINE SPECIFICATIONS

Make:	Isuzu, Diesel
Model:	4JB1
Displacement:	169 CID (2.8 L)
Rated Power:	62 HP (46.3 kW) @ 2600 RPM
Max Torque:	130 ft-lbs (176 Nm) @ 1600 RPM
High Idle Speed:	2800 RPM
Low Idle Speed:	1200 RPM
Number of Cylinders:	4
Bore and Stroke:	3.66" x 4.02" (93 x 102 mm)
Injection Timing:	17° BTDC
Valve Lash (cold):	0.016 in (0.40 mm)
Cooling Medium:	Liquid
Lubrication:	Pressure System w/Filter
Electrical System:	12 V Negative. Ground
Alternator:	55 Amp
Battery (Group Class):	31
(Cold Crank Rating):	700 CCA
Fuel Shut Off:	Electric Solenoid
Air Cleaner:	Dual Element, Replaceable Dry Cartridge
Engine Gradability:	30° (Intermittent) 25° (Continuous)
Oil Cooler Ratings:	STD HYD 700 BTU/MIN

(250° F oil in, 153° F air in, 15 gpm, 2000 ft/min air)

FUEL CONSUMPTION	65% Duty Cycle
At Full Throttle:	2 .19 gph (8.29 L/h)

FLUID CAPACITIES

Cooling System:	14 qt. (13.2 L)
Fuel Tank:	25 gal. (95 L)
Engine Oil:	8.9 qt. (8.4 L)
(Oil Spec.):	Class CG-4 15W-40
Chain Case: (each)	4.0 gal. (15 L)
(Oil Spec.):	Hydraulic Oil ISO VG 46
Hydraulic Reservoir	25 gal.(95 L)
(Oil Spec.):	Hydraulic Oil ISO VG 46

STANDARD HYDRAULICS

Maximum Pressure:	2500 PSI (172 Bar)
Control Valve Make/Model:	Gresen V20
Spool Sections:	3-Spool, Open Center
Pump Make:	Sauer Danfoss
Pump Type:	Gear
Pump Output:	22 GPM (83 L/min)
Hydraulic Power:	32.1 HP (23.9 kW)

TRANSMISSION and FINAL DRIVES

Type:	Servo-controlled Hydrostatic
Make:	Sauer Danfoss 2.81 CID (46 cc)
System Relief Pressure	5250 PSI (362 Bar)
Charge Pressure:	350 PSI (24 Bar)
Drive Motors (type):	Radial Piston
Make:	Rexroth
Model:	MCR-5 34.5 CID (565 cc)
Final Drive Chains:	100K
Reduction to Axles:	2.67 to 1
Travel Speed:	0-8 MPH (0-12.8 km/h)
2-Speed:	0-12 MPH (0-19.3 km/h)
Steering Control:	Dual Lever
Axle Type:	Forged
Diameter:	2.625 in (66.7 mm)
Axle Torque:	6400 ft-lbs (8677 Nm)

HYDRAULIC CYLINDERS

	LIFT	TILT
Number:	2	2
Cylinder Type:	Double Acting	Double Acting
Bore Diameter:	2.5" (63.5 mm)	3.0" (76.2 mm)
Rod Diameter:	1.625" (41.3 mm)	1.25" (31.8 mm)
Stroke:	35.6" (904 mm)	14.2" (361 mm)

OPERATING SPECIFICATIONS (Also See Appendix A)

Load Rating (SAE):	1900 lb. (862 kg)
Tipping Load (SAE):	3800 lb. (1724 kg)
Load Rating (SAE) w/ weight kit:	2000 lb. (907 kg)
Tipping Load (SAE) w/ weight kit:	4000 lb. (1814 kg)

Pallet Fork 662-441		[with Weight Kit]
Load Rating @ 24" (SAE)	1180 lb (535 kg)	[1250 lb (567 kg)]
Tipping Load @ 24" (SAE)	2350 lb (1066 kg)	[2500 lb (1134 kg)]

Load Rating @ 400 mm (ISO) 1380 lb (626 kg) [1460 lb (662 kg)]
Tipping Load @400 mm (ISO) 2770 lb (1256 kg)[2930 lb (1329 kg)]

Breakout (Lift): (SAE)	4300 lb. (1950 kg)
(Tilt): (SAE)	5600 lb. (2540 kg)
Raising Time: (SAE)	5.0 seconds
Lowering Time: (SAE)	3.3 seconds
Dumping Time: (SAE)	1.8 seconds
Roll back Time:	2.0 seconds
Operating Weight:	7300 lb. (3311 kg)
Weight Distribution:	
	Rear: 65%
	Front: 35%
Shipping Weight w/flotation tires:	6525 lb. (2960 kg)
(-130 fuel, -175 operator, -470 bucket)	
Braking System:	Hydrostatic
Parking Brake:	Spring Applied Hydraulic Release

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GENERAL INFORMATION
SYSTEM CONTAMINATION CONTROL

WARNING

NEVER service this unit when any part of the machine is in motion. ALWAYS BE SURE to exercise the "Mandatory Safety Shutdown Procedure" (see Safety chapter) BEFORE servicing this equipment.

Contamination is the leading cause of hydraulic system failures. When repairing hydraulic components, ensure that a clean work environment is maintained for maximum hydraulic system performance. Contamination can come from: fabrication residue, new oil, the environment, worn wiper seals on cylinders, through breathers, quick disconnects, open caps, condensed water vapor and rust particles from the storage tank.

Before a hydraulic component can be considered to have failed, it is essential that the following items be checked:

- Hydraulic oil level
- Filters (must be in good condition and Mustang approved)
- Steering and control linkage (lost motion)
- Pump drive (input rotation)
- Motor (output rotation)
- Chain drive system

Any play in the control linkages can create effects that are often attributed to worn pumps and motors. The pumps try to de-stroke (decrease output) and stroke (increase output) depending upon the load and flow rate.

One of the major areas of dirt entry into a hydraulic system is the rod seal (wiper) on the hydraulic cylinders. Tests have shown that a worn out rod seal can increase the amount of contamination entering the hydraulic system by more than ten fold.

A high contamination level can be generated very quickly in the field if entering contaminant is allowed to circulate and regenerate more contaminant. Topping off a reservoir under field conditions without dumping a large amount of dirt into the oil is very difficult. All oil added to the system should be clean. Scheduled maintenance, use of specified filters, and good assembly practices will result in prolonged service life of the hydraulic components.

It is **VITAL** that the area around a joint be clean when disassembling and reassembling. Contamination can fall or be pushed into the system. Use lint free paper towels to clean hydrostatic parts. DO NOT use shop rags because they can contaminate the system. Parts should be washed in new solvent and blown dry with clean air. Be sure to cap all ports, fittings and hoses after cleaning.

DO NOT reuse hydraulic oil in the hydrostatic system. The cost of oil is small compared to the cost of replacing hydrostatic components. **IT'S NOT WORTH THE RISK!** Clean looking oil may not be clean enough. Water and air are serious contaminants that cause changes in oil viscosity and lubricity. New "clean" oil in bulk containers, may not be clean enough for hydrostatic drive systems unless it is filtered through a 10 micron filter first. Oil in quart cans is normally acceptable. Use only Amoco Rykon 46 or equivalent.

Contamination in the system can cause three types of failures: catastrophic (large particles jamming a pump or valve), intermittent (contaminant on valve seat that is periodically washed away), and degradation (increased internal leakage caused by component wear or damage). Careful assembly, proper maintenance, and flushing should reduce most wear associated with contamination. Properly rated filters and an appropriate filter inspection and replacement schedule are also critical to keeping contaminants to recommended levels.

In summary, contamination is the biggest single factor affecting the performance and life of a hydrostatic system. Understanding the function of the entire system, performing scheduled maintenance, use of specified filters, and good assembly practices to eliminate and control contamination will result in prolonged service life of the hydraulic components.

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HYDRAULIC SYSTEM
TROUBLESHOOTING

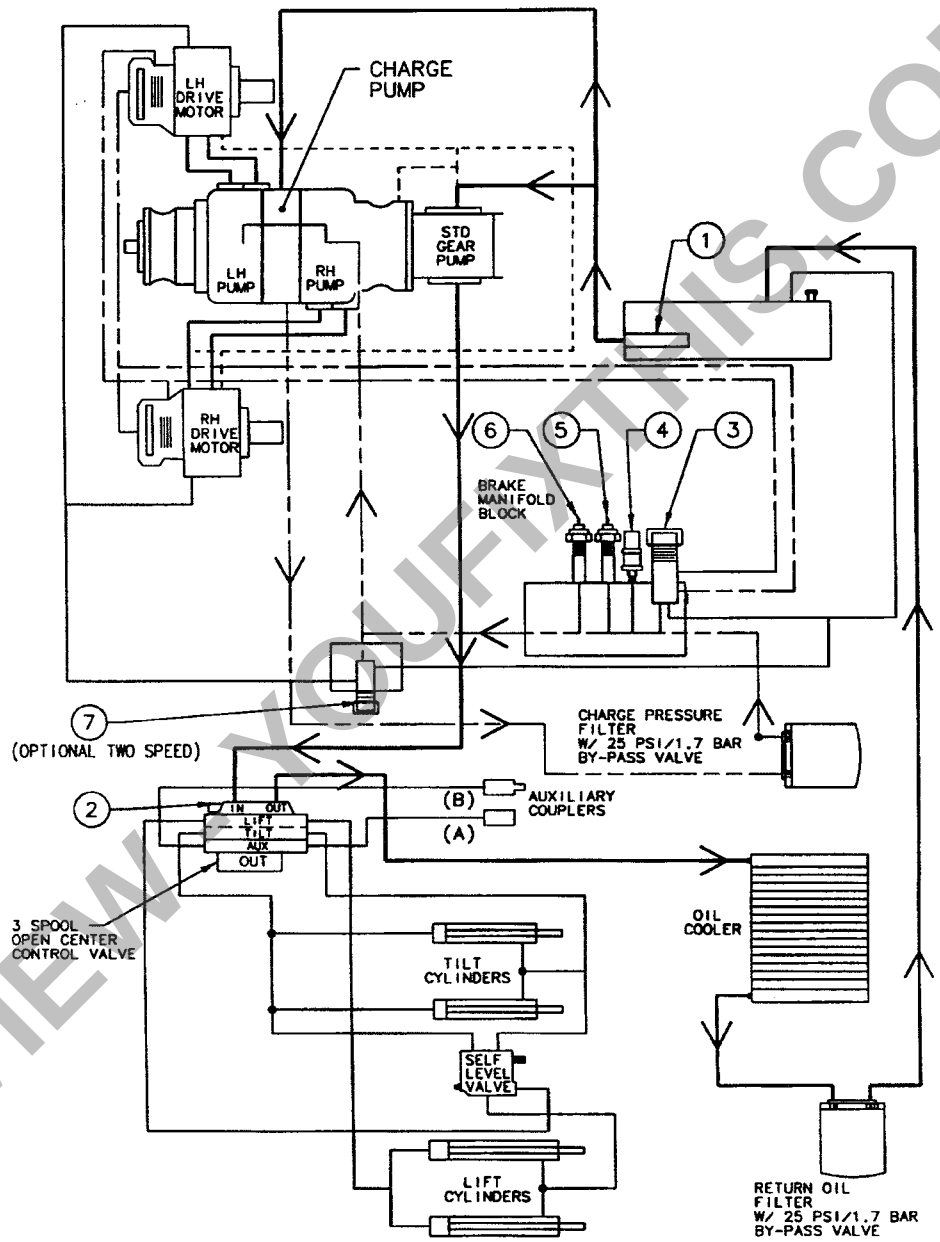
IMPORTANT

DO NOT attempt to service or repair major hydraulic system components, such as the hydrostatic pumps or drive motors unless authorized to do so by your Mustang dealer. Any unauthorized repair will void the warranty.

SYMPTOM	POSSIBLE CAUSE
Hydraulic action is slow or has jerky movement in either lift or tilt functions.	Check hydraulic fluid level Cold oil Check control linkages for binding interference Insufficient engine speed Oil leaking past cylinder packings (See procedure for checking cylinders on page 4-13, 14 & 15) Oil leaking within control valve Check for loose or leaking suction hoses or filters Check for obstruction in oil lines or valve Air leak in suction line Dirty hydraulic oil filter Restriction in suction line Hydraulic relief valve cartridge sticking, leaking internally, or pressure exceeds specification (see procedure for checking lift cylinder relief pressure on page 4-12)
Hydraulic action in only one circuit	Check control linkage for binding or interference Safety lock is holding one control in neutral Check hydraulic cylinders for external damage and/or leakage (See checking procedure for cylinders on page 4-13, 14 & 15) Control valve or parts of valve may need replacement

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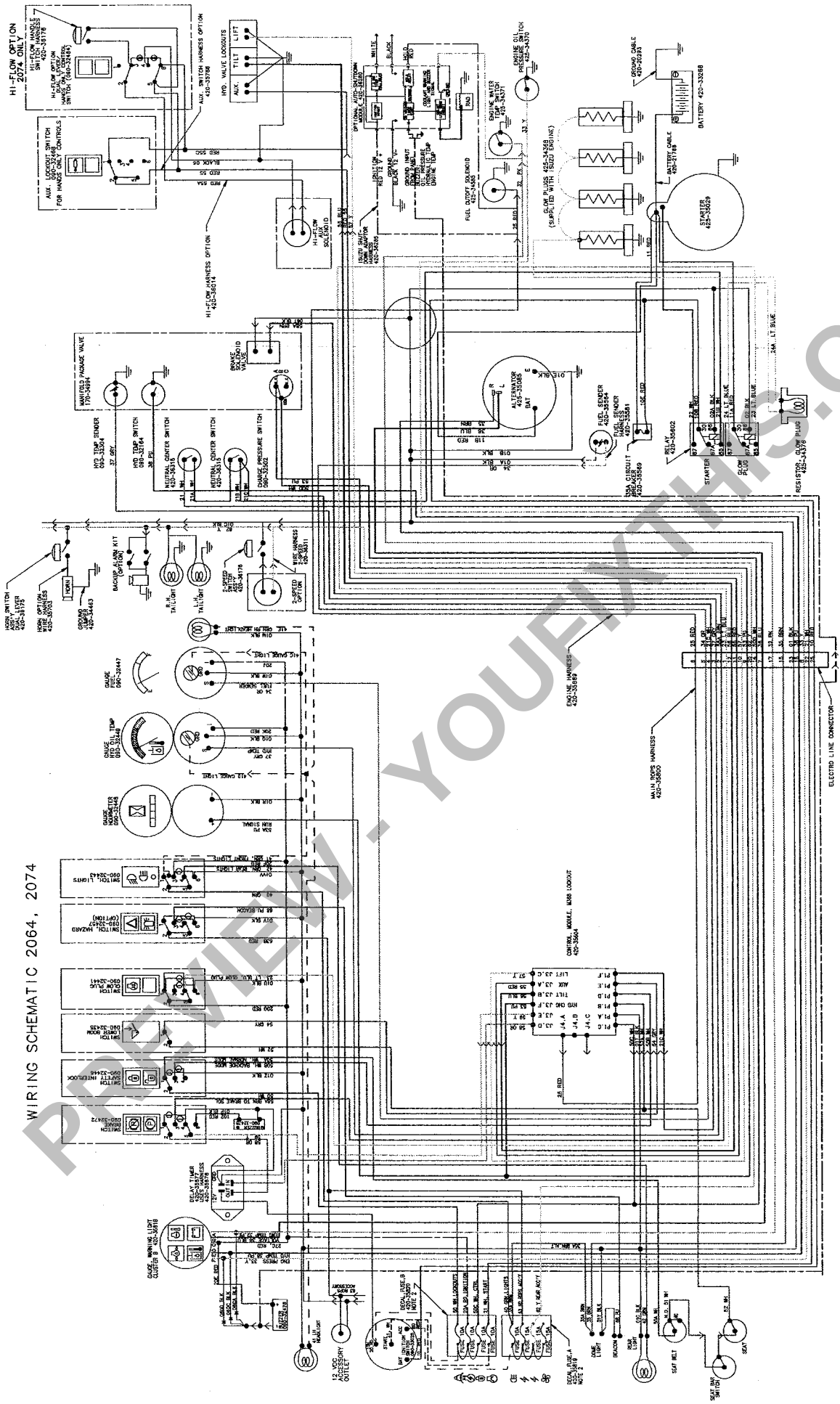
HYDRAULIC SYSTEM
FLOW DIAGRAM 2064/2074 STANDARD



1 - 100 MESH STRAINER
2 - MAIN RELIEF: 2064; 2500 PSI (172 BAR)
2074; 3000 PSI (207 BAR)
3 - BRAKE SOLENOID VALVE
4 - HYDRAULIC TEMPERATURE SWITCH
5 - HYDRAULIC TEMPERATURE SENDER
6 - CHARGE PRESSURE SWITCH
7 - TWO-SPEED ON-OFF SOLENOID (OPTIONAL)

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HYDROSTATIC DRIVE SYSTEM

IMPORTANT

DO NOT attempt to service or repair major hydrostatic system components, such as the hydrostatic pumps or drive motors unless authorized to do so by your Mustang dealer. Any unauthorized repair will void the warranty.

The hydrostatic drive system (transmission) propels the machine forward and rearward. It also allows each set of drive wheels to be operated independently of each other. When one set of drive wheels is turning faster than the other, the machine will turn. (This is the steering system.)

The hydrostatic drive system consists of the following components: A Sauer-Danfoss tandem, reversible, variable-displacement piston pump; two Rexroth MCR drive motors (one for each set of drive wheels), which also incorporate a hot-oil shuttle valve for cooling and filtering the closed loop circuit oil; a charging circuit to maintain a positive pressure for lubrication and to prevent cavitation in the piston pumps; and a drain system to allow oil to return to the reservoir from both pumps and both drive motors.

Each pump and motor set is connected by two high pressure lines and is called a closed-loop circuit. This is needed to allow equal power in either direction (forward and reverse).

Leakage oil from the piston pump case is routed to the gear pump for cooling and filtering via the hydraulic circuit. This oil is replenished by filtered oil from the charge circuit.

Leakage oil from the Rexroth motor hot oil shuttles is sent back to the tank for cooling and filtering via the drain system. This oil is replenished by filtered oil from the charge circuit.

The hydrostats have Manual Displacement Control (MDC) servos. The MDC converts a mechanical input signal to a hydraulic signal with a spring-centered, four-way servo valve, and ports hydraulic pressure to either side of a double-acting servo piston. The MDC provides output flow to the servo piston in proportion to the angular position of the control handle. The servo piston tilts the cradle swash-plate, and thus varying the pump's displacement from full displacement in one direction to full displacement in the opposite direction. Dut to normal operating force changes, the swash-plate tends to drift from the position preset by the machine operator. Drift, sensed by the fee-back linkage system connecting the swash-plate to the control valve, will activate the valve and supply pressure to the servo piston, maintaining the swash-plate in its preset position.

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SAFETY EQUIPMENT

All machines have certain built-in safety equipment designed to protect the operator from possible injury. If this equipment is removed for service or adjustment of the machine, it MUST be replaced and be in proper working condition before the machine is put back into service. These items include:

ROPS – Roll Over Protective Structure.

FOPS – Falling Object Protective Structure (incorporated in ROPS).

Lift Arm Stops – Located in the ROPS. Also available as a separate lift arm support device (P/N 490-23325).

Safety Interlocks – Prevent movement of the lift arm and bucket when the operator is not in the seat with the seat belt fastened.

WARNING! The safety interlocks are not meant to prevent movement of the lift arm when people are under it. ALWAYS USE THE LIFT ARM STOP FOR THIS PURPOSE.

Parking Brake – To keep the machine from moving when the engine is shut off, and when the machine is parked.

Neutral Centering Devices – Spring-loaded devices used to return the steering control(s) to the neutral position.

Neutral Start Switches – Incorporated into the Neutral Centering Devices to prevent the machine from starting if correct procedures are not followed.

Safety Decals – Designed to warn the operator of potential hazards that could cause injury if correct procedures are not followed.

Safety decals are available at no charge from our parts department. If these decals are damaged or missing or if a machine is repainted, please be sure they are replaced.

All safety equipment should be inspected for proper operation, and safety decals for legibility and proper placement. Any faults must be corrected before the machine is put back into operation.

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GENERAL INFORMATION
ACCESS PANELS

Belly Pan

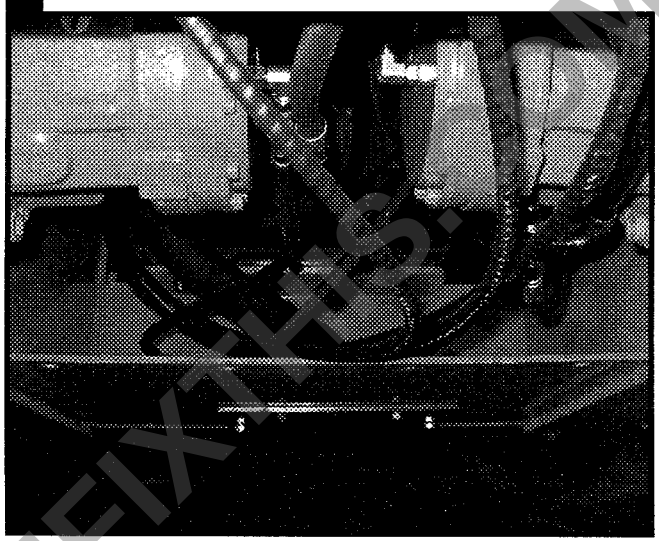
This access panel is located under the center of the frame between the wheels. Removal of this panel will allow for clean out of the hydrostatic compartment and offers access to the fittings on the drive motors and hydraulic reservoir.

Use care when unbolting this plate from under the machine as it is heavy and may be retaining water and debris in the hydrostatic compartment **[G]**.

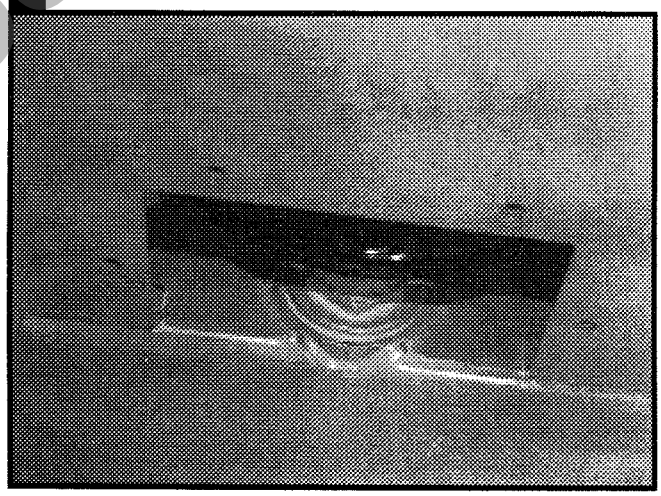
Suction Strainer Screen Access Plate

The suction strainer screen access plate is located behind the belly pan toward the rear of the machine **[H]**.

G



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HYDRAULIC SYSTEM
HYDRAULIC CYLINDERS
SERVICE AND REPAIR

NOTE: Refer to page 4-18 and 4-19 for diagram of hydraulic cylinder.

Nicks or burrs on a hydraulic cylinder shaft can cause seal damage in the cylinder gland which will cause external leaks. Occasionally check the cylinder shaft by running your hand up and down the length of it. This is particularly important when handling gravel, stone and scrap metal. Shaft inspection can detect damage early before it becomes large enough to cause damage to the seals. Minor damage to a cylinder shaft can be dressed to clean it up.

Pin holes at either of the cylinder ports can cause external oil leaks. These can be repaired by welding. When welding on the base end, extend the cylinder rod to prevent heat build up from damaging the seals. Loosen both fittings to relieve any pressure resulting from heat.

When welding on the rod end, disassemble the cylinder to prevent damage to the gland and seals.

The weld should start away from the hole and work across it. This will allow heat to burn oil out of the hole so a successful weld can take place.

BE SURE THERE IS NO PRESSURE IN THE CYLINDER!

When using an arc welder **do not connect** the ground clamp to the hydraulic cylinder shaft. This can cause an arc, which will damage cylinder seals.

ALWAYS DISCONNECT THE BATTERY WHEN WELDING!

A dented cylinder barrel can cause the piston to be worn flat. This will result in internal damage and cause leaks. If this happens it is not economical to repair the cylinder.

Assembly of Seals to Cylinder Gland:

1. Inspect the gland and insure that it is free of nicks and burrs.

2. Clean the gland.

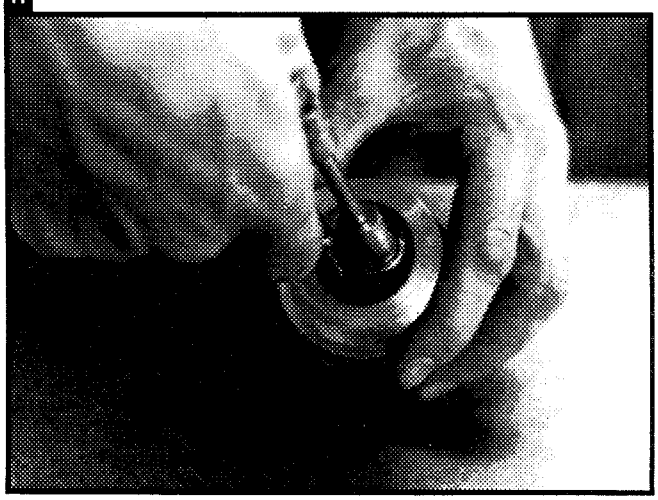
3. Assemble the rod seal into the rod seal groove (the inner groove on the inside of the gland. **NOTE:** On tilt cylinders it is the middle groove). The cup side of this seal is to be assembled toward the inside of the cylinder.

   This seal is difficult to assemble and is most easily assembled as follows:

   a. Lubricate the seal and the groove.

   b. Bend seal into a "U" shape (easily done using a seal installation tool as shown in **[H]**.

H



   c. Insert the seal into the gland and position it over the seal groove.

   d. Remove the tool allowing the seal to "snap" into the groove.

NOTE: Seals may be soaked in warm oil or water or placed into a warm environment to "soften" them thereby making installation easier.

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